



PubMed	Nucleotide	Protein	Genome	Structure	PopSet	Taxonomy	MIM	Books
Search		Nucleotide	for			Go	Clear	
Limits		Preview/Index		History		Clipboard		Details
Display	default	Save	Text	Add to Clipboard		Get Subsequence		

□ 1: NP_570122. skeletal muscle a...[gi:18765707]

BLink, Links

LOCUS SKIP 372 aa linear PRI 11-OCT-2002
 DEFINITION skeletal muscle and kidney enriched inositol phosphatase isoform 2;
 43-kDa form skeletal muscle and kidney enriched inositol
 phosphatase [Homo sapiens].
 ACCESSION NP_570122
 VERSION NP_570122.1 GI:18765707
 DBSOURCE REFSEQ: accession NM_130766.1
 KEYWORDS .
 SOURCE Homo sapiens (human)
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (residues 1 to 372)
 AUTHORS Mitchell,C.A., Brown,S., Campbell,J.K., Munday,A.D. and Speed,C.J.
 TITLE Regulation of second messengers by the inositol polyphosphate
 5-phosphatases
 JOURNAL Biochem. Soc. Trans. 24 (4), 994-1000 (1996)
 MEDLINE 97123250
 PUBMED 8968499
 REFERENCE 2 (residues 1 to 372)
 AUTHORS Drayer,A.L., Pesesse,X., De Smedt,F., Communi,D., Moreau,C. and
 Erneux,C.
 TITLE The family of inositol and phosphatidylinositol polyphosphate
 5-phosphatases
 JOURNAL Biochem. Soc. Trans. 24 (4), 1001-1005 (1996)
 MEDLINE 97123251
 PUBMED 8968500
 REFERENCE 3 (residues 1 to 372)
 AUTHORS Ijuin,T., Mochizuki,Y., Fukami,K., Funaki,M., Asano,T. and
 Takenawa,T.
 TITLE Identification and characterization of a novel inositol
 polyphosphate 5-phosphatase
 JOURNAL J. Biol. Chem. 275 (15), 10870-10875 (2000)
 MEDLINE 20219123
 PUBMED 10753883
 COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The
 reference sequence was derived from AB036830.1.
 Summary: This gene encodes a protein with 5-phosphatase activity
 toward polyphosphate inositol. The protein localizes to the cytosol
 in regions lacking actin stress fibers. It is thought that this
 protein may negatively regulate the actin cytoskeleton. Alternative
 splicing of this gene results in two transcript variants encoding
 different isoforms.
 Transcript Variant: This variant (2) has an additional 229 nt exon
 in its 5' end, as compared to variant 1. Thus isoform 2 has a
 distinct N-terminus and is 76 aa shorter than isoform 1.
 FEATURES
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 /chromosome="17"
 /map="17p13.3"

Protein 1..372
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/note="43-kDa form skeletal muscle and kidney enriched inositol phosphatase"

Region 9..248
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/note="IPPC"
/db_xref="CDD:smart00128"

Region 17..242
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/note="Exo_endo_phos"
/db_xref="CDD:pfam03372"

variation 340
/allele="R"
/allele="S"
/db_xref="dbSNP:3208368"

CDS 1..372
/gene="SKIP"
/coded_by="NM_130766.1:619..1737"
/db_xref="LocusID:51763"

ORIGIN

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1 mdvlsplsfi kvshvrmggi lllvfakyqh lpyiqilstk stptglfgyw gnkggvnicl
61 klygyyvsii nchlpphisn nyqrlehfdi ilemqncegr dipnildhdl iiwfgdmnfr
121 iedfglhfv r esiknrcygg lwekdqlsia kkhdpllrref qegrllfppt ykfdnrnsndy
181 dtsekkkrkpa wtdrilwrkl r qpcagpdtpp ippashfsls lrgysshmtg gisdhkpvsq
241 tfdlelkplv saplivlmpe dlwtvendmm vsysstsdff sspwdwigly kvglrdvndy
301 vsyawvgdsk vscsdnlngv yidisniptt edefllcyys nslrsvvgis rpfqippgsl
361 redplgeaqp qi
```

//

Revised: July 5, 2002.

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10/25/2002 12:40 PM

 NCBI	BLAST	Protein	Structure	PubMed	Taxonomy
	Genome	Nucleotide	3D-Domains	Books	Help

Query: gi|1399101 phosphatidylin sit 1 (4,5)bisphosphate 5-phosphatase homol g; has similarity to motifs conserved in phosphatidylin sitol (4,5)bisp hpat 5-phosphatases, Swiss-Prot Accession Number Q01968, and the product of GenBank Accession Number M74161



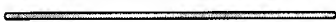











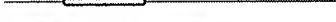
























COG5411 assigned by Cognitor (3 best hits)

Best hits	Common Tree	Taxonomy Report	3D structures	CDD-Search	GI list
-----------	-------------	-----------------	---------------	------------	---------

153 BLAST hits to 19 unique species [Sort by taxonomy proximity](#)

☐ Archaea ☐ Bacteria ☒ Metazoa ☒ Fungi ☒ Plants ☐ Viruses ☒ Other Eukaryotae

Keep only Cut-Off

329 aa	SCORE	P	ACCESSION	GI	PROTEIN DESCRIPTION
	1803	27	BAA92341	7209857	43-kDa form skeletal muscle and kidney
	1803	27	BAA92340	7209855	skeletal muscle and kidney enriched :
	1791	27	NP_570122	18765707	skeletal muscle and kidney enriched :
	1791	27	AAH04362	13279338	SKIP for skeletal muscle and kidney e
	1313	21	AAC60757	2121241	putative phosphoinositide 5-phosphata
	732	21	XP_137500	23620188	phosphatidylinositol (4,5) bisphospha
	731	21	BAA90553	6906704	proline-rich inositol polyphosphate :
	726	27	BAC04657	21755308	unnamed protein product [Homo sapiens
	707	27	AAD15618	4314432	similar to phosphatidylinositol (4,5)
	649	27	XP_038489	22068673	similar to phosphatidylinositol (4,5)
	489	27	AAB03216	1399105	phosphatidylinositol (4,5)bisphosphat
	423	8	AAF48627	7293245	CG9784-PA [Drosophila melanogaster]
	409	8	EAA00417	21288096	agCP9655 [Anopheles gambiae str. PES
	406	27	XP_171903	22066542	similar to skeletal muscle and kidney
	354	8	AAF57919	7302845	CG6805-PA [Drosophila melanogaster]
	352	27	XP_170949	22045277	similar to Type II inositol-1,4,5-tri
	352	27	AAA79207	1019103	inositol polyphosphate 5-phosphatase
	338	21	BAB23505	12836107	data source:MGI, source key:MGI:1032
	338	21	AAB95412	9945302	inositol polyphosphate 5-phosphatase
	338	21	AAH28864	20809342	Unknown (protein for MGC:25218) [Mus
	338	21	AAG23293	15418718	inositol polyphosphate 5-phosphatase
	330	8	EAA09938	21297793	agCP11786 [Anopheles gambiae str. PES
	324	21	T42384	7513696	inositol-1,4,5-trisphosphate 5-phosph
	282	27	NP_001578	13325070	phosphatidylinositol polyphosphate 5-
	282	27	AAB03839	13254464	ocrl1 [Homo sapiens]
	282	27	CAA18150	3171882	dJ454M7.1.2 (Lowe Oculocerebrorenal s
	282	27	CAA18151	4160528	dJ454M7.1.1 (Lowe Oculocerebrorenal s
	282	27	1814461A	228953	OCRL-1 gene
	282	27	AAA59964	13249985	Lowe oculocerebrorenal syndrome prote
	282	27	Q01968	12644378	Inositol polyphosphate 5-phosphatase
	272	8	EAA00566	21288245	agCP9746 [Anopheles gambiae str. PES
	270	7	AAG18574	10567757	synaptojanin UNC-26A [Caenorhabditis
	270	7	AAG18575	10567759	synaptojanin UNC-26B [Caenorhabditis
	268	8	CAA15931	2749755	/prediction=(method:'genefinder', v
	267	12	AAG02341	9937209	synaptojanin 1 [Lampetra fluviatilis]
	266	4	CAD11414	16944690	conserved hypothetical protein [Neuro
	266	3	CAB41466	4688596	inositol 1,4,5-trisphosphate 5-phosph
	265	3	AAD46036	5668810	Contains similarity to gb M74161 inos
	264	21	AAC40143	3241989	synaptojanin 2 isoform epsilon [Mus r

264	21	AAC40146	3241995	synaptojanin 2 isoform alpha [Mus mus
264	21	XP 110262	20348625	expressed sequence AI481647 [Mus musc
264	21	BAB31837	12860016	data source:MGD, source key:MGI:12016
264	21	AAC40141	3241985	synaptojanin 2 isoform beta [Mus musc
264	21	AAC40142	3241987	synaptojanin 2 isoform delta [Mus mus
260	27	BAA74933	20521692	KIAA0910 protein [Homo sapiens]
260	21	Q62910	8134729	Synaptojanin 1 (Synaptic inositol-1,4
260	21	2204390A	1586823	synaptojanin
260	21	S68448	7514092	synaptojanin, 170K - rat
260	27	AAC51921	2702321	synaptojanin [Homo sapiens]
260	21	CAA07267	3367736	DeltaSAC-synaptojanin1 [Rattus norveg
260	21		26006227	
260	27	AAC51922	2702323	synaptojanin [Homo sapiens]
260	21	AAB60525	1166575	synaptojanin
258	3	NP 172038	15220522	hypothetical protein; protein id: At1
258	3	AAF79735	8778727	T25N20.12 [Arabidopsis thaliana]
258	21	AAK61723	16647986	synaptojanin 2B2 [Rattus norvegicus]
258	21	AAK61722	16647984	synaptojanin 2B1 [Rattus norvegicus]
258	21	AAB92481	2708493	synaptojanin II [Rattus norvegicus]
258	3	AAC98062	4056496	unknown protein [Arabidopsis thaliana]
258	3	AAC23399	3212848	putative inositol polyphosphate 5'-ph
258	21	AAC40144	3241991	synaptojanin 2 isoform gamma [Mus mus
258	21	AAC33137	3478621	synaptojanin 2 [Mus musculus]
257	8	AAF46796	7291368	CG6562-PA [Drosophila melanogaster]
257	8	AAM52040	21464474	SD04710p [Drosophila melanogaster]
257	21	BAA21652	2285875	synaptojanin [Bos taurus]
257	27	AAN73051	25361067	synaptojanin 2A [Homo sapiens]
257	21	O18964	10720298	Synaptojanin 1 (Synaptic inositol-1,4
257	27	AAG46036	12034892	synaptojanin 2 [Homo sapiens]
257	27	AAD02178	4104822	synaptojanin 2B [Homo sapiens]
250	3	AAD30615	4836913	Putative inositol 1,4,5-trisphosphate
249	27	A41075	106731	inositol-1,4,5-trisphosphate 5-phosph
248	7	C88883	25396130	protein JC8.10 [imported] - Caenorhal
243	7	CAB02743	3874363	Hypothetical protein C16C2.3 [Caenorl
243	27	XP 170860	22066536	similar to skeletal muscle and kidney
240	3	BAB90404	20161480	putative inositol-1, 4, 5-trisphosph
239	3	AAD15403	4263717	putative inositol polyphosphate 5'-ph
237	4	CAA86201	557848	orf, len: 946, CAI: 0.12, similar to
234	8	AAB08434	1546841	apyrase [Rhodnius prolixus]
232	3	CAB86425	7523406	inositol-1, 4, 5-trisphosphate 5-Phos
231	3	AAD32289	4887753	putative inositol polyphosphate 5'-ph
230	3	AAB60921	2190557	F5I14.11 [Arabidopsis thaliana]
226	4	CAB11494	6942000	putative Inositol polyphosphate phos
226	4	T39233	7492669	probable Inositol polyphosphate phos
225	4	1I9YA	14277798	Chain A, Crystal Structure Of Inosit
225	4	CAA17882	2956769	phosphatidylinositol phosphate phos
224	4	CAB54821	5830513	putative inositol polyphosphate phos
222	4	CAA95982	1302022	ORF YNL106c [Saccharomyces cerevisiae]
222	4	CAA90520	929847	ORF N2160 [Saccharomyces cerevisiae]
221	8	AAF49933	7294594	CG10426-PA [Drosophila melanogaster]
221	27	AAA96658	556192	51C protein
221	3	AAG12525	10086465	Putative inositol polyphosphate 5-ph
221	3	NP 564437	18399139	inositol polyphosphate 5-phosphatase
221	27	CAA74743	2653424	inositol polyphosphate 5-phosphatase
221	3	AAG17824	10444261	inositol polyphosphate 5-phosphatase
219	21	AAF28187	6760079	SH2-containing inositol 5-phosphatase
219	21	XP 133640	20838758	inositol polyphosphate phosphatase-1:
219	21	BAA81818	5263147	SHIP-2 [Rattus norvegicus]
219	21	BAA82308	5381251	SH2-containing inositol phosphatase ;
218	3	CAB59428	6117853	inositol-1,4,5-trisphosphate 5-Phosph
218	4	CAA64029	1164954	YOR3231w [Saccharomyces cerevisiae]
218	3	AAG17825	10444263	inositol polyphosphate 5-phosphatase
218	3	AAD10829	4204697	putative inositol polyphosphate 5-ph
217	3	CAA17144	2894610	putative protein [Arabidopsis thalian
217	3	NP 567547	18415007	putative protein; protein id: At4g186

	217	3	AAD10828	4204695	putative inositol polyphosphate 5-ph
	214	3	BAB11520	10178037	contains similarity to inositol poly
	210	3	AAF43224	7239498	Contains similarity to the inositol-
	210	3	AAK82558	15081807	At1g71710/F14O23_9 [Arabidopsis thal:
	210	3	NP_565023	18409892	RIBOSOMAL PROTEIN, putative; protein
	210	3	AAG51823	12323727	putative inositol polyphosphate phos
	209	27	CAA97842	1483513	Lowe oculocerebrorenal syndrome (OCR)
	207	3	AAD21781	4522008	putative inositol polyphosphate-5-ph
	206	8	EAA09392	21297247	agCP15025 [Anopheles gambiae str. PE
	202	8	AAL29114	16769790	LP11751p [Drosophila melanogaster]
	201	3	BAA99519	9081780	hypothetical protein [Oryza sativa (:
	200	21	AAB40610	1777942	inositol polyphosphate 5' phosphatase
	199	21	AAF25823	6708167	inositol phosphatase s-SHIP [Mus musc
	199	21	AAF25824	6708169	inositol phosphatase s-SHIPD183 [Mus
	199	21	JC6118	7513819	SH2-containing inositol phosphatase
	199	21	AAF69143	7767531	SH2-containing inositol 5-phosphatase
	199	21	AAB18937	1209068	SH2-containing inositol-phosphatase
	199	21	AAC52606	1236991	SH2 containing inositol-5-phosphatase
	199	21	AAD37118	5001726	SH2-containing inositol phosphatase
	198	27	AAC50453	1245337	signaling inositol polyphosphate 5 ph
	198	27	AAC50454	1277082	signaling inositol polyphosphate 5 ph
	198	27	CAA67071	1495456	inositol polyphosphate 5- phosphatase
	198	27	AAB53573	1619914	SH2-containing inositol 5-phosphatase
	198	27	AAB49680	1888525	SH2 containing inositol-5-phosphatase
	198	27	AAD00081	4097285	signaling inositol polyphosphate phos
	198	27	XP_096169	20537935	similar to signaling inositol polyph
	196	21	AAC53023	1255352	SH2-containing inositol phosphatase
	193	3	BAB11645	10178171	inositol-1, 4, 5-trisphosphate 5-phos
	190	7	T19021	7511557	probable inositol phosphatase T25B9.1
	190	7	NP_501999	17542560	Endonuclease Exonuclease phosphatase
	190	7	CAA94327	24817271	Hypothetical protein T25B9.10 [Caeno
	189	21	AAF86957	9295353	inositol polyphosphate 5-phosphatase
	182	27	AAF81404	8925284	phosphatidylinositol polyphosphate 5-
	181	21	BAA82150	5360761	pharbin [Rattus norvegicus]
	179	3	CAC00457	15387732	possible hypothetical 131.3 Kd prote:
	179	27	AAB03215	1399103	phosphatidylinositol (4,5) bisphospha
	169	7	AAA27979	289660	Hypothetical protein C50C3.7 [Caenorl
	168	3	EAA22794	23491200	Homo sapiens KIAA0910 protein-relate
	162	3	CAD50826	23498756	hypothetical protein [Plasmodium falc
	160	8	AAC28738	3388165	salivary nitrophorin [Cimex lectular:
	143	4	CAA99075	1419885	ORF YOL065c [Saccharomyces cerevisia
	139	3	AAN35707	23496045	hypothetical protein [Plasmodium falc
	136	4	CAD25856	19069388	putative INOSITOL POLYPHOSPHATE-5-PH
	133	3	EAA15481	23478376	hypothetical protein [Plasmodium yoei
	130	3	BAB89826	20160888	contains EST AU069284(C53872)-simila
	124	21	AAB95413	2766531	inositol polyphosphate 5-phosphatase
	104	21	XP_126663	20912903	RIKEN cDNA 2410154J16 [Mus musculus]
	104	21	BAB27200	12846522	data source:SPTR, source key:Q13137,
	105	4	CAD21299	18376182	related to inositol polyphosphate 5-p

(FILE 'HOME' ENTERED AT 12:51:54 ON 05 DEC 2002)

FILE 'MEDLINE, CAPLUS, EMBASE, BIOSIS' ENTERED AT 12:52:06 ON 05 DEC 2002

L1	2043 S 5-PHOSPHATASE
L2	887 S L1 AND PY<1997
L3	387 DUP REM L2 (500 DUPLICATES REMOVED)
L4	17 S L3 AND (ANTIBODY OR ANTISERA OR POLYCLONAL)
L5	0 S NUSSBAUM RL/AU
L6	6 S NUSSBAUM/AU
L7	6 DUP REM L6 (0 DUPLICATES REMOVED)
L8	103 S NUSSBAUM R/AU
L9	69 DUP REM L8 (34 DUPLICATES REMOVED)
L10	0 S L9 AND L2
L11	3 S L9 AND L1

L4 ANSWER 1 OF 17 MEDLINE
 ACCESSION NUMBER: 97094645 MEDLINE
 DOCUMENT NUMBER: 97094645 PubMed ID: 8939879
 TITLE: Regulation of phosphatidylinositol 3,4,5-trisphosphate
5'-phosphatase activity by insulin.
 AUTHOR: Guilherme A; Klarlund J K; Krystal G; Czech M P
 CORPORATE SOURCE: Program in Molecular Medicine and Department of
 Biochemistry and Molecular Biology, University of
 Massachusetts Medical Center, Worcester, Massachusetts
 01605, USA.
 CONTRACT NUMBER: DK30648 (NIDDK)
 DK30898 (NIDDK)
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1996 Nov 22)
 271 (47) 29533-6.
 Journal code: 2985121R. ISSN: 0021-9258.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199701
 ENTRY DATE: Entered STN: 19970128
 Last Updated on STN: 20000303
 Entered Medline: 19970113

AB Polyphosphoinositides are thought to be mediators of cellular signaling pathways as well as regulators of cytoskeletal elements and membrane trafficking events. It has recently been demonstrated that a class of phosphatidylinositol (PI) 3,4,5-P3 **5'-phosphatases** contains SH2 domains and proline-rich regions, which are present in many signaling proteins. We report here that insulin stimulation of Chinese hamster ovary cells (CHO-T) expressing human insulin receptors causes an 8-10-fold increase in PI 3,4,5-P3 **5'-phosphatase** activity in anti-phosphotyrosine immunoprecipitates of the cell lysates. This insulin-sensitive polyphosphoinositide **5'-phosphatase** did not catalyze dephosphorylation of PI 4,5-P2. No change in **5'-phosphatase** activity was detected in insulin receptor or IRS-1 immune complexes in response to insulin. However, insulin treatment of CHO-T cells markedly increased the PI 3,4,5-P3 **5'-phosphatase** activity associated with Shc and Grb2. The insulin-regulated polyphosphoinositide **5'-phosphatase** was not immunoreactive with **antibody** raised against the recently cloned SHIP **5'-phosphatase** reported to associate with Shc and Grb2 in B lymphocytes. These data demonstrate that insulin causes formation of complexes containing a PI 3,4,5-P3 **5'-phosphatase**, and Shc or Grb2, or both, suggesting an important role of this enzyme in insulin signaling.

=> d ibib abs l4 2-17

L4 ANSWER 2 OF 17 MEDLINE
 ACCESSION NUMBER: 96215347 MEDLINE
 DOCUMENT NUMBER: 96215347 PubMed ID: 8626616
 TITLE: Post-translational modification of human brain type I
 inositol-1,4,5-trisphosphate **5-phosphatase** by farnesylation.
 AUTHOR: De Smedt F; Boom A; Pesesse X; Schiffmann S N; Erneux C
 CORPORATE SOURCE: Interdisciplinary Research Institute, Universite Libre de
 Bruxelles, Campus Erasme, 1070 Brussels, Belgium.
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1996 Apr 26)
 271 (17) 10419-24.

Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199606
ENTRY DATE: Entered STN: 19960708
Last Updated on STN: 19960708
Entered Medline: 19960621

AB In brain, type I inositol-1,4,5-trisphosphate 5-
phosphatase (InsP3 5-**phosphatase**) is the major
isoenzyme hydrolyzing the calcium-mobilizing second messenger InsP3.
Activity of this enzyme could be measured in both soluble and particulate
fractions of tissue homogenates. The protein sequence showed a putative
C-terminal isoprenylation site (CVVQ). In this study, two mutants have
been generated. The first mutant (C409S) has a serine replacing a
cysteine
at position 409 of the wild-type enzyme. The second mutant (K407D1) is a
deletion mutant that lacks the last five C-terminal amino acids. These
constructs were individually expressed by transfection in COS-7 cells.
Western blot analysis of wild-type transfected cells indicated that both
soluble and particulate fractions had a 43-kDa immunoreactive band, with
a
higher proportion of the original homogenate associated with the
particulate part. On the contrary, when the two mutated constructs were
transfected in COS-7 cells, the phosphatase was predominantly soluble.
Confocal immunofluorescence studies showed the wild-type enzyme to be
present on the cell surface of transfected COS-7 cells and in subcellular
compartments around the nucleus. This was not observed for the two
mutants, where uniform immunofluorescence labeling was observed
throughout
the cytosol. Recombinant type I InsP3 5-**phosphatase**
expressed in Escherichia coli was a substrate of purified
farnesyltransferase. Altogether, the data therefore suggest a direct
participation of Cys-409 in a C-terminally anchored InsP3 5-
phosphatase by farnesylation.

L4 ANSWER 3 OF 17 MEDLINE
ACCESSION NUMBER: 96206042 MEDLINE
DOCUMENT NUMBER: 96206042 PubMed ID: 8654924
TITLE: p150Ship, a signal transduction molecule with inositol
polyphosphate-5-**phosphatase** activity.
AUTHOR: Lioubin M N; Algate P A; Tsai S; Carlberg K; Aebersold A;
Rohrschneider L R
CORPORATE SOURCE: Fred Hutchinson Cancer Research Center, Seattle,
Washington
98104, USA.
CONTRACT NUMBER: CA20551 (NCI)
CA40987 (NCI)
SOURCE: GENES AND DEVELOPMENT, (1996 May 1) 10 (9)
1084-95.
Journal code: 8711660. ISSN: 0890-9369.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-L36818; GENBANK-P32019; GENBANK-Q01968;
GENBANK-U51742
ENTRY MONTH: 199607
ENTRY DATE: Entered STN: 19960808

Last Updated on STN: 20000303

Entered Medline: 19960726

AB The production, survival, and function of monocytes and macrophages is regulated by the macrophage colony-stimulating factor (M-CSF or CSF-1) through its tyrosine kinase receptor Fms. Binding of M-CSF to Fms induces the tyrosine phosphorylation and association of a 150-kD protein with the phosphotyrosine-binding (PTB) domain of Shc. We have cloned p150 using a modified yeast two-hybrid screen. p150 contains one SH2 domain, two potential PTB-binding sites, an ATP/GTP-binding domain, several potential SH3-binding sites, and a domain with homology to inositol polyphosphate-**5-phosphatases**. p150 **antibodies** detect this protein in FDC-P1 myeloid cells, but the same protein is not detectable

in

fibroblasts. The **antibodies** immunoprecipitate a 150-kD protein from quiescent or M-CSF-stimulated FDC-P1 cells that hydrolyzes PtdIns(3,4,5)P₃ to PtdIns(3,4)P₂. This activity is observed in Shc immunoprecipitates only after M-CSF stimulation. Retroviral expression of p150 in FD-Fms cells results in strong inhibition of cell growth in M-CSF and a lesser inhibition in IL-3. Ectopic expression of p150 in fibroblasts

does not inhibit growth. This novel protein, p150(ship) (SH2-containing inositol phosphatase), identifies a component of a new growth factor-receptor signaling pathway in hematopoietic cells.

L4 ANSWER 4 OF 17

MEDLINE

ACCESSION NUMBER: 96096741 MEDLINE

DOCUMENT NUMBER: 96096741 PubMed ID: 8529643

TITLE: Tissue distribution and intracellular localisation of the 75-kDa inositol polyphosphate **5-phosphatase**.

AUTHOR: Speed C J; Matzaris M; Bird P I; Mitchell C A

CORPORATE SOURCE: Department of Medicine, Monash Medical School, Box Hill Hospital, Melbourne, Australia.

SOURCE: EUROPEAN JOURNAL OF BIOCHEMISTRY, (1995 Nov 15) 234 (1) 216-24.

Journal code: 0107600. ISSN: 0014-2956.

PUB. COUNTRY: GERMANY: Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199601

ENTRY DATE: Entered STN: 19960220

Last Updated on STN: 19960220

Entered Medline: 19960126

AB The 75-kDa inositol polyphosphate **5-phosphatase** (75-kDa **5-phosphatase**) hydrolyses several important mediators of intracellular calcium homeostasis, including inositol 1,4,5-trisphosphate [Ins(1,4,5)P₃], inositol 1,3,4,5-tetrakisphosphate [Ins(1,3,4,5)P₄] and phosphatidylinositol 4,5-bisphosphate [PtdIns(4,5)P₂]. Northern analysis of various human tissues revealed the 75-kDa **5-phosphatase** has a ubiquitous expression, where differential splicing may occur in specific tissues. Prominent expression of a 4.4-kb transcript was noted in human lung, thymus, testes and placenta, and a 4.6-kb transcript was observed in heart, brain, kidney, ovary and colon. Determination of the intracellular location of the enzyme by indirect immunofluorescence, demonstrated that the 75-kDa **5-phosphatase** was associated with mitochondrial and cytosolic cellular compartments. Immunoprecipitation of the total cell homogenate of human lung carcinoma cells (A549) with anti-(recombinant 75-kDa **5-phosphatase**) **antibodies** revealed

that the 75-kDa **5-phosphatase** is the major PtdIns(4,5)P₂ **5-phosphatase** in this cell line. Analysis of PtdIns(4,5)P₂ **5-phosphatase** activity in subcellular fractions of A549 cells revealed peak 75-kDa **5-phosphatase** enzyme activity in the cytosolic and mitochondrial enriched fractions. Immunoblot analysis further confirmed the mitochondrial location of the enzyme. This study demonstrates the tissue distribution and intracellular location of the 75-kDa **5-phosphatase** and reveals a novel location for an enzyme involved in phosphatidylinositol turnover.

L4 ANSWER 5 OF 17 MEDLINE

ACCESSION NUMBER: 95236949 MEDLINE
DOCUMENT NUMBER: 95236949 PubMed ID: 7720525
TITLE: Pharmacokinetics and organ clearance of a 3'-biotinylated, internally [32P]-labeled phosphodiester oligodeoxynucleotide coupled to a neutral

avidin/monoclonal

antibody conjugate.

AUTHOR: Kang Y S; Boado R J; Pardridge W M
CORPORATE SOURCE: Department of Medicine, UCLA School of Medicine 90024.
CONTRACT NUMBER: R01-AI-28760 (NIAID)
SOURCE: DRUG METABOLISM AND DISPOSITION, (1995 Jan) 23 (1) 55-9.

Journal code: 9421550. ISSN: 0090-9556.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; AIDS
ENTRY MONTH: 199505
ENTRY DATE: Entered STN: 19950605
Last Updated on STN: 19970203
Entered Medline: 19950523

AB The pharmacokinetics and organ uptake of a 3'-biotinylated, [32P] internally labeled 36-mer phosphodiester oligodeoxynucleotide (PO-ODN) were measured after intravenous injection in the anesthetized adult rat. The PO-ODN was antisense to the tat gene of the human immunodeficiency virus, and was 3'-biotinylated to a) protect against serum and tissue 3'-exonuclease activity, and b) facilitate coupling to a neutral avidin-based transcellular drug delivery vector. The latter was comprised of a covalent conjugate of neutral avidin (NLA) and the OX26 murine monoclonal **antibody** to the rat transferrin receptor. The PO-ODN was internally labeled at the 21-nucleotide position to prevent rapid hydrolysis [32P] label by serum and tissue 5'-**phosphatases**. The uptake of the 3'-bio-[32P21]PO-ODN by brain, heart, kidney, lung, and liver was measured. The studies show that the unconjugated 3'-bio-[32P21]PO-ODN was rapidly removed from plasma, with a mean residence time of 22 +/- 1 min and a systemic clearance of 9.2 +/- 0.5 ml/min/kg. Large amounts of [32P] radioactivity were recovered in the urine following the injection of the PO-ODN, and when this fraction was included in the calculation of the renal clearance parameter, the renal clearance was 20-fold higher, indicating the principal site of organ clearance of the unconjugated PO-ODN was the kidney. Conjugation of the 3'-bio-PO-ODN to the NLA-OX26 vector reduced the systemic clearance 50%, owing to a > 10-fold reduction in renal clearance. Following conjugation of the 3'-bio-PO-ODN to the NLA-OX26 vector, the major clearance organ

was

the liver. (ABSTRACT TRUNCATED AT 250 WORDS)

L4 ANSWER 6 OF 17 MEDLINE

ACCESSION NUMBER: 94230317 MEDLINE
 DOCUMENT NUMBER: 94230317 PubMed ID: 8175661
 TITLE: Adriamycin inhibits inositol 1,4,5-trisphosphate 3-kinase activity in vitro and blocks formation of inositol 1,3,4,5-tetrakisphosphate in stimulated Jurkat T-lymphocytes. Does inositol 1,3,4,5-tetrakisphosphate play a role in Ca(2+)-entry?.
 AUTHOR: da Silva C P; Emmrich F; Guse A H
 CORPORATE SOURCE: Max Planck Society, Clinical Research Unit for Rheumatology/Immunology, Institute for Clinical Immunology of the University, Erlangen, Germany.
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Apr 29) 269 (17) 12521-6.
 Journal code: 2985121R. ISSN: 0021-9258.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199406
 ENTRY DATE: Entered STN: 19940620
 Last Updated on STN: 19970203
 Entered Medline: 19940606

AB Effects of the cytostatic drug adriamycin on inositol polyphosphate metabolism were analyzed in a human T-cell line (Jurkat) using a recently developed anion-exchange high performance liquid chromatography/post-column complexometric dye system. Treatment of intact T-cells with adriamycin prior to stimulation with an anti-CD3 monoclonal **antibody** induced a dose- and time-dependent decrease in the intracellular level of inositol 1,3,4,5-tetrakisphosphate (complete inhibition after 2 h at 10 micromM adriamycin) and an increase in the level of inositol 1,3,4-trisphosphate without significantly changing the levels of other inositol phosphates. A marked inhibition of the inositol 1,4,5-trisphosphate 3-kinase activity and a slight activation of the inositol 1,3,4,5-tetrakisphosphate **5-phosphatase** activity were observed in cytosolic extracts in the presence of adriamycin, providing an explanation for the drug-induced metabolic effect. Adriamycin thus seems to be an extremely valuable tool for further dissecting inositol polyphosphate metabolism, as well as signaling pathways. Along these lines, we observed that adriamycin did not change the free cytosolic Ca²⁺ concentration of Jurkat T-lymphocytes and, in particular, did not modulate Ca²⁺ influx upon T-cell receptor stimulation.
 We conclude that (i) inositol phosphate signaling pathways constitute an as yet undescribed target for the action of adriamycin and that (ii) an increase of inositol 1,3,4,5-tetrakisphosphate is not necessary for sustained Ca(2+)-entry in stimulated T-cells.

L4 ANSWER 7 OF 17 MEDLINE
 ACCESSION NUMBER: 94148835 MEDLINE
 DOCUMENT NUMBER: 94148835 PubMed ID: 7508913
 TITLE: Purification of two immunologically related phosphatidylinositol-(4,5)- bisphosphate phosphatases from bovine brain cytosol.
 AUTHOR: Palmer F B; Theolis R Jr; Cook H W; Byers D M
 CORPORATE SOURCE: Atlantic Research Centre, Halifax, Nova Scotia.
 SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Feb 4) 269 (5) 3403-10.

Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199403
ENTRY DATE: Entered STN: 19940330

Last Updated on STN: 19970203
Entered Medline: 19940318

AB Two phosphatidylinositol-(4,5)-bisphosphate (PtdIns-(4,5)P2) phosphatase activities were isolated from a 45% saturated (NH4)2SO4 fraction of the soluble cytosol (100,000 x g supernatant) of bovine cerebral hemispheres by ion-exchange chromatography on Q-Sepharose (Q-1 and Q-2). Each was further purified on heparin-Sepharose, butyl-agarose, and/or Cibacron

blue

F3GA to yield products of similar specific activity (70-100 μ mol/min/mg protein, 1000-2000-fold purification). Salt was required to stabilize activity and dithiothreitol was required to preserve maximum activity and to prevent or reverse aggregation that resisted disruption by mercaptoethanol and/or SDS. Monoclonal **antibodies** were prepared that recognized several components in the partially purified preparations.

Immunoabsorption of activity by monoclonal **antibodies** that had been chemically cross-linked to protein A-Sepharose followed by SDS-polyacrylamide gel electrophoresis of absorbed proteins was used to identify the active components as a 155-kDa protein in Q-1 and a 115-kDa protein in Q-2. Two **antibodies** recognized different epitopes in the 155-kDa phosphatase. A third **antibody** recognized a common epitope in both phosphatases indicating that the two enzymes are related. Both phosphatases were Mg(2+)-dependent, exhibited similar kinetic properties, and hydrolyzed PtdIns(4,5)P2 but not PtdIns(4)P, phosphatidic acid, or several other phosphate monoesters. They hydrolyzed inositol (1,4,5)-trisphosphate at 30% of the rate with PtdIns(4,5)P2 and this activity co-purified with PtdIns(4,5)P2 phosphatase activity. High molecular weight PtdIns(4,5)P2 phosphatases may be precursors of lower molecular weight soluble Type II inositol polyphosphate-5-**phosphatases** shown to account for the PtdIns(4,5)P2 phosphatase activity in platelets (Matzaris, M., Jackson, S.P., Laxminarayan, M., Speed, C.J., and Mitchell, C.A. (1994) J. Biol. Chem. 269, 3397-3402).

The

three **antibodies** did not inhibit activity but recognized both native and denatured (Western blots) phosphatases and should be useful tools to study the distribution, structure, and regulation of the two forms of PtdIns(4,5)P2 phosphatase.

L4 ANSWER 8 OF 17 MEDLINE

ACCESSION NUMBER: 94148834 MEDLINE

DOCUMENT NUMBER: 94148834 PubMed ID: 8106379

TITLE: Identification and characterization of the phosphatidylinositol-(4, 5)-bisphosphate 5-**phosphatase** in human platelets.

AUTHOR: Matzaris M; Jackson S P; Laxminarayan K M; Speed C J; Mitchell C A

CORPORATE SOURCE: Department of Medicine, Monash Medical School, Box Hill Hospital, Melbourne, Australia.

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Feb 4) 269 (5) 3397-402.

Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199403
ENTRY DATE: Entered STN: 19940330
Last Updated on STN: 19970203
Entered Medline: 19940318

AB Phosphatidylinositol (4,5)-bisphosphate (PtdIns(4,5)-P2) is the precursor of several second messenger molecules. In unstimulated cells PtdIns(4,5)P2

is hydrolyzed by a PtdIns(4,5)P2 **5-phosphatase** to form phosphatidylinositol 4-phosphate (PtdIns(4)P) which is subsequently recycled to phosphatidylinositol. PtdIns(4,5)P2 **5-phosphatase** activity was detected in platelet cytosolic and particulate fractions. The platelet PtdIns(4,5)P2 **5-phosphatase** activity was magnesium but not calcium dependent. The elution profile of platelet cytosolic PtdIns(4,5)P2 **5-phosphatase** from anion exchange resins, exactly matched that of the 75-kDa inositol-polyphosphate **5-phosphatase** (Ins(1,4,5)P3 **5-phosphatase**). The latter is a signal terminating enzyme responsible for the hydrolysis of inositol (1,4,5)-trisphosphate (Ins(1,4,5)P3) to inositol (1,4)-bisphosphate (Mitchell, C.A., Connolly, T.M., and Majerus, P.W. (1989) J. Biol. Chem. 264, 8873-8877). **Polyclonal antibodies** raised against recombinant 75-kDa Ins(1,4,5)P3 **5-phosphatase** specifically immunoprecipitated all PtdIns-(4,5)P2 **5-phosphatase** activity from both the platelet membrane and cytosolic fractions. Purified 75-kDa Ins(1,4,5)P3 **5-phosphatase** hydrolyzed PtdIns(4,5)P2 forming PtdIns(4)P ($K_m = 250 \text{ microm}$). By contrast, purified membrane-associated 43-kDa Ins(1,4,5)P3 **5-phosphatase** did not hydrolyze PtdIns(4,5)P2. In the unstimulated platelet, recycling of PtdIns-(4,5)P2 to PtdIns(4)P is mediated by the 75-kDa Ins-(1,4,5)P3 **5-phosphatase**.

L4 ANSWER 9 OF 17 MEDLINE

ACCESSION NUMBER: 94117443 MEDLINE
DOCUMENT NUMBER: 94117443 PubMed ID: 8288593
TITLE: Purple acid phosphatase of the human macrophage and osteoclast. Characterization, molecular properties, and crystallization of the recombinant di-iron-oxo protein secreted by baculovirus-infected insect cells.
AUTHOR: Hayman A R; Cox T M
CORPORATE SOURCE: Department of Medicine, University of Cambridge, Addenbrooke's Hospital, United Kingdom.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Jan 14) 269 (2) 1294-300.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 19940312
Last Updated on STN: 19940312
Entered Medline: 19940222

AB The purple phosphatases catalyze hydrolysis of phosphate esters (optimum pH approximately 5) and are resistant to inhibition by dextro-rotatory tartrate; their distinctive color is due to Fe(III)-phenolate charge-transfer transitions at their active site. Expression of human purple phosphatase, designated type 5 acid phosphatase, is restricted to osteoclasts and other activated cells of monohistiocytic lineage, but its

biological role in relation to bone resorption and phagocytosis is unknown. To characterize this enzyme further, we have engineered the human type 5 acid phosphatase into a baculovirus vector expression system that enabled milligram quantities of purple protein to be purified from medium containing Sf9 host cells. The phosphatase cDNA was transcribed as a single RNA species of 1.5 kilobases as in human tissues. Tartrate-resistant acid phosphatase activity reacting with uteroferrin **antisera** appeared in the culture medium, from which up to 8 mg/liter was purified by two-step cation-exchange chromatography at pH 8.0. Two isoforms of approximately 36 kDa were identified by SDS-polyacrylamide electrophoresis and were converted to a single species of apparent molecular size 34 kDa upon treatment with N-glycosidase F, indicating secreted glycoforms of a single polypeptide. Mass spectroscopy showed that the mean molecular mass of the active, secreted glycoprotein was 35849 Da. The recombinant enzyme (specific activity, 190 μmol p-nitrophenol/min/mg at 37 degrees C) contained 2 iron atoms/molecule and formed purple, monoclinic crystals. Exposure to the ferric chelator, 1,2-dimethyl-3-hydroxypyrid-4-one, rapidly inactivated the enzyme, which was not inhibited by alpha, alpha'-bipyridyl, a ferrous chelator. That ferric iron is essential for enzymatic catalysis, was further indicated by the synergistic effects of the reductant, dithiothreitol, and bipyridyl on phosphatase activity. The recombinant purple phosphatase catalyzed the peroxidation of 5-aminophthalhydrazide (luminol), as evidenced by the induction of chemiluminescence; this reaction was inhibited by alpha, alpha'-bipyridyl at concentrations that did not inhibit phosphatase activity. The divalent iron moiety of human type 5 **phosphatase** may therefore participate in the generation of free radical species by fluid-phase reactions involving Fenton chemistry that are dissociated from its phosphatase function.

L4 ANSWER 10 OF 17 MEDLINE

ACCESSION NUMBER: 93222738 MEDLINE
DOCUMENT NUMBER: 93222738 PubMed ID: 8385519
TITLE: Lectins and anti-T monoclonal **antibodies**-induced changes of second messengers generating enzymes in human peripheral blood mononuclear cells.
AUTHOR: Graber R; Leoni L; Carrel S; Losa G A
CORPORATE SOURCE: Laboratorio di Patologia Cellulare, Istituto Cantonale di Patologia, Locarno, Switzerland.
SOURCE: CELLULAR AND MOLECULAR BIOLOGY, (1993 Feb) 39 (1) 45-54.
Journal code: 9216789. ISSN: 0145-5680.
PUB. COUNTRY: France
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199305
ENTRY DATE: Entered STN: 19930521
Last Updated on STN: 20000327
Entered Medline: 19930507

AB A five min. incubation of peripheral blood mononuclear cells (PBMN) with either phytohaemagglutinin (PHA) or concanavalin A (ConA) resulted in distinct subcellular redistribution patterns of phosphatidylinositol 4,5-bisphosphate phospholipase C [PtdIns(4,5)P2-PLC] and myo-inositol 1,4,5-trisphosphate monophosphatase [Ins(1,4,5)P3-monophosphatase] activities. When compared to control cells, PHA-treated PBMN cells displayed a significant increase of PtdIns(4,5)P2-PLC and

Ins(1,4,5)P3-monophosphatase relative specific activities in the nuclear fraction along with an increment (D) in enzyme amount of 6.5% and 7.3%, respectively. Incubation with B66.6, an anti-CD4 monoclonal **antibody** (Mab) which specifically activates CD4(+)-T cells in the absence of any other stimuli, also induced changes of these activities in the nuclear fraction, thus mimicking the effect of PHA observed in helper T cell subpopulation. No changes were detected after incubation of PBMN cells with the non mitogenic anti-CD4 MAB 101-69, or with an anti-CD3 MAB which activates T cells only in the presence of a second stimulus. On the other hand, after incubation with ConA, PtdIns(4,5)P2-PLC relative specific activity was enhanced in the microsomal fraction while the Ins(1,4,5)P3-monophosphatase activity increased in both nuclear and microsomal fractions and decreased in cytosol. An increment D of 4.6% and 10.9% for PtdIns(4,5)P2-PLC and Ins(1,4,5)P3-monophosphatase, respectively, was measured in the microsomal fraction. Only after three days of incubation with a mitogenic anti-CD2 MAB Lau-2.1.2, the PtdIns(4,5)P2-PLC activity increased in the particulate fraction of PBMN similar to ConA treatment.

L4 ANSWER 11 OF 17 MEDLINE

ACCESSION NUMBER: 93186806 MEDLINE

DOCUMENT NUMBER: 93186806 PubMed ID: 8383126

TITLE: Purification and characterization of a 43-kDa membrane-associated inositol polyphosphate 5-**phosphatase** from human placenta.

AUTHOR: Laxminarayan K M; Matzaris M; Speed C J; Mitchell C A

CORPORATE SOURCE: Department of Medicine, Monash Medical School, Box Hill Hospital, Melbourne, Australia.

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 Mar 5) 268 (7) 4968-74.

Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199304

ENTRY DATE: Entered STN: 19930416

Last Updated on STN: 19930416

Entered Medline: 19930406

AB We have identified, isolated, and characterized a membrane-associated inositol polyphosphate 5-**phosphatase** (5-**phosphatase**) from the particulate fraction of human placenta. The enzyme was purified 3700-fold from a detergent extract of human placental membranes to apparent homogeneity, by chromatography on DEAE-Sepharose, S-Sepharose, hydroxylapatite, and Biosil SEC 250 HPLC gel filtration. The purified 5-**phosphatase** has a molecular mass of 43 kDa as determined by sodium dodecyl sulfate-polyacrylamide gel electrophoresis

and gel filtration chromatography. The enzyme hydrolyzes inositol 1,4,5-trisphosphate (Ins(1,4,5)P3) to inositol 1,4 bisphosphate (Ins(1,4)P2) with an apparent Km of 5 microM. The 43-kDa 5-**phosphatase** also hydrolyzes inositol 1,3,4,5-tetrakisphosphate (Ins(1,3,4,5)P4) with an apparent Km of 1.2 microM. The enzyme requires Mg2+ ions for activity and is inhibited by Ca2+ concentrations greater than 100 microM. **Polyclonal antibodies** developed against the membrane-associated enzyme immunoprecipitate the purified membrane-associated placental 5-**phosphatase** and the platelet Type I cytosolic enzyme, but not the 75-kDa platelet Type II 5-**phosphatase**. These results demonstrate that the purified membrane 5-**phosphatase** bears physical and

immunological similarity with the Type I cytosolic platelet enzyme.

L4 ANSWER 12 OF 17 MEDLINE

ACCESSION NUMBER: 92041857 MEDLINE
DOCUMENT NUMBER: 92041857 PubMed ID: 1718960
TITLE: Cloning and expression of human 75-kDa inositol polyphosphate-**5-phosphatase**.
AUTHOR: Ross T S; Jefferson A B; Mitchell C A; Majerus P W
CORPORATE SOURCE: Washington University School of Medicine, Division of Hematology-Oncology, St. Louis, Missouri 63110.
CONTRACT NUMBER: HLBI-14147 (NHLBI)
HLBI-16634 (NHLBI)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1991 Oct 25) 266 (30) 20283-9.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-M74161; GENBANK-S60729; GENBANK-S61326; GENBANK-S61330; GENBANK-S61332; GENBANK-S61335; GENBANK-S61337; GENBANK-S61340; GENBANK-S61342; GENBANK-S61344
ENTRY MONTH: 199112
ENTRY DATE: Entered STN: 19920124
Last Updated on STN: 19960129
Entered Medline: 19911202

AB Inositol polyphosphate-**5-phosphatase** (**5-phosphatase**) hydrolyzes inositol 1,4,5-trisphosphate and inositol 1,3,4,5-tetrakisphosphate and thereby functions as a signal terminating enzyme in cellular calcium ion mobilization. A cDNA encoding human platelet **5-phosphatase** has been isolated by screening for beta-galactosidase fusion proteins that bind to inositol 1,3,4,5-tetrakisphosphate. The sensitivity of the screening procedure was enhanced 50- to 100-fold by amplification of "sublibraries" prior to carrying out binding assays. The sequences derived from the "expression clone" were used to screen human erythroleukemia cell line and human megakaryocytic cell line cDNA libraries. We obtained two additional clones

which together consist of 2381 base pairs. The amino-terminal amino acid sequence from the 75-kDa **5-phosphatase** purified from platelets is identical to amino acids 38-56 predicted from the cDNA. This suggests that the platelet **5-phosphatase** is formed by proteolytic processing of a larger precursor. The cDNA predicts that the mature enzyme contains 635 amino acids (Mr 72, 891). **Antibodies** directed against recombinant TrpE fusion proteins of either an amino-terminal region or a carboxyl-terminal region immunoprecipitate the enzyme activity from a preparation of the 75-kDa form of platelet **5-phosphatase** (Type II) but do not precipitate the distinct 47-kDa **5-phosphatase** (Type I) also found in platelets. In addition, the recombinant protein expressed in Cos-7 cells has the same **5-phosphatase** activity as the platelet **5-phosphatase**.

L4 ANSWER 13 OF 17 MEDLINE

ACCESSION NUMBER: 91182529 MEDLINE
DOCUMENT NUMBER: 91182529 PubMed ID: 1706930
TITLE: Soluble and particulate inositol 1,4,5-trisphosphate **5-phosphatases** show common antigenic determinants.

AUTHOR: Verjans B; Hollande F; Moreau C; Lejeune C; Erneux C
 CORPORATE SOURCE: Institut de Recherche Interdisciplinaire (IRIBHN),
 Universite Libre de Bruxelles, Brussels, Belgium.
 SOURCE: CELLULAR SIGNALLING, (1990) 2 (6) 595-9.
 Journal code: 8904683. ISSN: 0898-6568.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199105
 ENTRY DATE: Entered STN: 19910526
 Last Updated on STN: 19960129
 Entered Medline: 19910506

AB Inositol 1,4,5-trisphosphate **5-phosphatase** catalyses the dephosphorylation of the phosphate in the 5-position from inositol 1,4,5-trisphosphate and inositol 1,3,4,5-tetrakisphosphate. One particulate and two soluble enzymes were previously described in bovine brain. In this study, we have obtained a precipitating antiserum against soluble type I inositol 1,4,5-trisphosphate **5-phosphatase**. The particulate, but not the soluble type II enzyme, was immunoprecipitated by the serum. Inositol 1,4,5-trisphosphate **5-phosphatase** activity from crude extracts of rat brain, human platelets and rat liver were immunoprecipitated by the same **antibodies**, suggesting the existence of common antigenic determinant among inositol 1,4,5-trisphosphate **5-phosphatases** of diverse sources.

L4 ANSWER 14 OF 17 MEDLINE

ACCESSION NUMBER: 90262548 MEDLINE
 DOCUMENT NUMBER: 90262548 PubMed ID: 1693074
 TITLE: Rat brain inositol 1,4,5-trisphosphate 3-kinase.
 Ca²(+)-sensitivity, purification and **antibody** production.
 AUTHOR: Takazawa K; Lemos M; Delvaux A; Lejeune C; Dumont J E;
 Erneux C
 CORPORATE SOURCE: Institute of Interdisciplinary Research, School of
 Medicine, Free University of Brussels, Campus Erasme,
 Belgium.
 SOURCE: BIOCHEMICAL JOURNAL, (1990 May 15) 268 (1) 213-7.
 Journal code: 2984726R. ISSN: 0264-6021.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199006
 ENTRY DATE: Entered STN: 19900720
 Last Updated on STN: 19970203
 Entered Medline: 19900628

AB Inositol 1,4,5-trisphosphate (InsP₃) 3-kinase catalyses the ATP-dependent phosphorylation of InsP₃ to inositol 1,3,4,5-tetrakisphosphate (InsP₄). InsP₃ 3-kinase was purified from rat brain by Blue-Sepharose, phosphocellulose and calmodulin (CaM)-Sepharose affinity chromatography. The purified enzyme was stimulated by Ca²⁺/CaM by 3-6-fold as compared with the activity measured in the presence of EGTA. Rat brain InsP₃ 3-kinase activity was associated with two silver-stained bands of about equal activity which migrated with an apparent Mr of 50,000 on SDS/polyacrylamide gels. InsP₃ 3-kinase activity from rat brain could be immunoprecipitated by an antiserum against the SDS/PAGE-purified 50,000-Mr protein doublet. InsP₃ kinase activity from bovine brain and the InsP₃

5-phosphatase activity from rat brain were not immunoprecipitated. On Western blot, the human brain crude InsP3 3-kinase reacted specifically, but less strongly than the rat brain enzyme, with the antiserum.

L4 ANSWER 15 OF 17 MEDLINE

ACCESSION NUMBER: 90219128 MEDLINE

DOCUMENT NUMBER: 90219128 PubMed ID: 1691309

TITLE: Alzheimer disease proteins (A68) share epitopes with tau but show distinct biochemical properties.

AUTHOR: Ksiezak-Reding H; Binder L I; Yen S H

CORPORATE SOURCE: Department of Pathology, Albert Einstein College of Medicine, Bronx, New York 10461.

SOURCE: JOURNAL OF NEUROSCIENCE RESEARCH, (1990 Mar) 25 (3) 420-30.

Journal code: 7600111. ISSN: 0360-4012.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199005

ENTRY DATE: Entered STN: 19900622

Last Updated on STN: 19980206

Entered Medline: 19900524

AB Alz 50, a monoclonal **antibody** raised against Alzheimer brain homogenate, reacts with neurofibrillary tangles, microtubule-associated proteins tau, and Alzheimer brain proteins of molecular weight 70-60 kDa (A68). To study the relationship between A68 and normal human tau we compared the biochemical properties of these proteins and tested the reactivity of A68 with eight **antibodies** (Alz 50, Tau 60, Tau-2, Tau 14, Tau-1, Ab 636.7, NP14, Tau 46) that bind to various regions of tau

molecule. On Western blots, all tau-reactive **antibodies**, except Tau-1, recognized A68. Pretreatment with alkaline phosphatase was required

for the Tau-1 binding to A68. A68 consisted of three polypeptides of 68, 64, and 60 kDa, while tau contained 4-6 polypeptides of 50-65 kDa. A68 was

less heterogenous than tau in the number of pI variants on two-dimensional

gels. All A68 variants were more acidic (pI 5.5-6.5) than human tau (pI 6.5-8.5). **Phosphatase** treatment had only a minor effect on the pI and mobility of A68. Limited proteolysis of A68 with trypsin or chymotrypsin generated large fragments of 56-66 kDa (chymotrypsin) and 40-45 kDa (trypsin). While none of the fragments was recognized by Alz 50, the chymotryptic fragments were reactive with all the other tau **antibodies**, and the tryptic fragments were positive with five of the **antibodies** (Tau 14, Tau-1, Ab 636.7, NP14, and Tau 46). The peptide maps of A68 differed from that of tau in the number and the size of the peptide fragments. The differences in biochemical properties of these proteins and the sharing multiple epitopes

suggest that A68 is a modified form of tau. The modification in part may be due to phosphorylation, although other changes rendering different isoelectrical properties and susceptibility to proteases need to be considered. The removal of the Alz 50 epitope by a cleavage of a 2-3 kDa fragment which does not contain the most C-terminal epitope (Tau 46) indicates that the Alz 50 epitope is located at the N-terminal periphery of the A68 molecule.

L4 ANSWER 16 OF 17 MEDLINE

ACCESSION NUMBER: 85182736 MEDLINE
DOCUMENT NUMBER: 85182736 PubMed ID: 3988771
TITLE: The type 5, acid phosphatase from spleen of humans with hairy cell leukemia. Purification, properties, immunological characterization, and comparison with

porcine

uteroferrin.

AUTHOR: Ketcham C M; Baumbach G A; Bazer F W; Roberts R M

CONTRACT NUMBER: HD-08560 (NICHD)

T32 CA09126 (NCI)

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1985 May 10)
260 (9) 5768-76.

Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198506

ENTRY DATE: Entered STN: 19900320

Last Updated on STN: 19970203

Entered Medline: 19850613

AB The spleens of patients with hairy cell leukemia contain high levels of a tartrate-insensitive, cationic, acid phosphatase (the human Type 5 isozyme). This phosphatase has been purified by a procedure which involves

only two chromatographic steps: CM-cellulose chromatography and immunoaffinity chromatography on sheep **antibodies** generated against porcine uteroferrin. Uteroferrin is an abundant iron-containing acid phosphatase that can be recovered readily from porcine uterine secretions. Like uteroferrin, the purified human Type 5 **phosphatase** is a glycoprotein of molecular weight about 34,000. It contains two atoms of iron/molecule. The human phosphatase and

uteroferrin

also resemble each other closely in electrophoretic mobility, substrate specificity, and response to a variety of activators and inhibitors.

Mouse

monoclonal **antibodies** have been raised to uteroferrin and to the human Type 5 **phosphatase**. Three monoclonal **antibodies** which bind with high affinities to distinct sites on the uteroferrin molecule also recognize the human spleen enzyme, but bind to it with much lower affinity. These **antibodies** also recognize cationic acid phosphatases purified from bovine and rat spleens. A monoclonal **antibody** raised against the human enzyme, but selected for binding to uteroferrin, appears to recognize a relatively conserved site on all four phosphatases. We conclude that the human Type

5

isozyme belongs to a growing class of structurally related, iron-containing acid phosphatases which includes the iron-transport protein, uteroferrin.

L4 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:119025 CAPLUS

DOCUMENT NUMBER: 114:119025

TITLE: Inositol 1,4,5-trisphosphate 3-kinase distribution in the rat brain. High levels in the hippocampal CA1 pyramidal and cerebellar Purkinje cells suggest its involvement in some memory processes

AUTHOR(S): Mailleux, P.; Takazawa, K.; Erneux, C.;
Vanderhaeghen,

CORPORATE SOURCE: J. J.
Lab. Neuropathol. Neuropept. Res., Erasme Acad.
Hosp.,

Brussels, Belg.

SOURCE: Brain Research (1991), 539(2), 203-10
CODEN: BRREAP; ISSN: 0006-8993

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The distribution of inositol 1,4,5-triphosphate (InsP3) 3-kinase was studied in the adult rat brain, using **polyclonal antibodies** raised against the purified 50,000-Da rat brain enzyme by immunohistochem. and Western blot, in addn. to enzymic assay. Immunohistochem., the enzyme was detected in neurons, where it was localized in the dendrites and at the periphery of the cell bodies.

Using

selective toxin lesions, the highest enzyme levels were found in the dendrites of hippocampal CA1 pyramidal cells and in neurons in the dorsal portion of the lateral septum, regions both involved in long-term potentiation; and in the dendrites of Purkinje cell subpopulations in the cerebellum, a region involved in long-term depression. High levels were found in neurons in the cortex, the anterior olfactory nucleus, the striatum (caudate, putamen, olfactory tubercle, Calleja islets, and accumbens), the central nucleus of the amygdala, the hippocampal dentate gyrus, and the subiculum. The enzyme was not detected in other brain regions. By Western blot, a 50,000-Da immunoreactive band was present in the cortex, caudate-putamen and cerebellum. This band was most highly stained in the hippocampus. InsP3 3-kinase activity, stimulated by calcium/calmodulin, corresponded to 6172 pmol of InsP4 produced/min/mg protein in the hippocampus followed by frontal and parietotemporal cortex and cerebellum. This activity was below 400 in the brain stem and spinal cord. Taking into account the possibility of InsP3 3-kinase isoenzymes not recognized by the **antibody**, the existence of the highest InsP3 **5-phosphatase** activity in the cerebellum and the heterogeneity of the enzyme cellular distribution, the immunohistochem. results corresponded reasonably well to the Western blot and enzymic assay.


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<u>L2</u>	Nussbaum-R\$-I.in.	3	<u>L2</u>
<u>L1</u>	5-phosphatase	78	<u>L1</u>

END OF SEARCH HISTORY

Delavaí, Jan

72452

From: Roark, Jessica
Sent: Wednesday, July 31, 2002 4:00 PM
To: Delaval, Jan
Subject: 09/892287

Jan,

Please search, including pending, the following from 09/892,287:

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Results on paper please.

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Jessica H. Roark

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